

## CLAIMS

What is claimed is:

1. An apparatus, comprising:  
  
a channel having a backplane interface unit that selects a signal from a backplane, said backplane interface unit coupled to a cross connect table that provides an indication where said signal may be found on said backplane, said indication correlated to a logical label, said logical label correlated to a frame location that said selected signal is transmitted within.
2. The apparatus of claim 1 further comprising a framing unit that is coupled to an output of said backplane interface, said framing unit for providing said frame location for said selected signal.
3. The apparatus of claim 2 further comprising a line interface unit having an input that is coupled to an output of said framing unit.
4. The apparatus of claim 3 wherein said line interface unit further comprises an optical transmitter.
5. The apparatus of claim 3 wherein said line interface unit has an output coupled to a networking line.

6. The apparatus of claim 1 wherein said signal is an STS-1 signal.
7. The apparatus of claim 1 wherein said signal is an STM-1 signal.
8. The apparatus of claim 1 wherein said backplane is a full mesh backplane.
9. A method, comprising:
  - a) assigning a logical identification label to a location within an outbound frame that transports an egress signal;
  - b) assigning a physical identification label to a location on a backplane where an ingress signal is found; and
  - c) configuring a portion of a node's switching fabric by correlating said logical identification label to said physical identification label.
10. The method of claim 9 wherein said configuring further comprises updating entries within a cross connect table.
11. The method of claim 9 wherein said configuring is executed by a node's configuration software.
12. The method of claim 9 wherein said signal is an STS-1 signal.

13. The method of claim 9 wherein said signal is an STM-1 signal.

14. The method of claim 9 wherein said backplane is a full mesh backplane.

15. The method of claim 9 further comprising operating said node by converting said ingress signal into said egress signal

16. A method, comprising:

- a) assigning a logical identification label to a location within an outbound frame that transports an egress signal;
- b) assigning a physical identification label to a location on a backplane where an ingress signal is found;
- c) configuring a portion of a node's switching fabric by correlating said logical identification label to said physical identification label;
- d) operating said node by converting said ingress signal into said egress signal; and
- e) changing said correlation by replacing, if a networking line fails or degrades, said physical identification label with a second physical identification label.

17. The method of claim 16 wherein said second physical identification label corresponds to a location on said backplane where a second ingress signal is found, said second signal a protection signal to said ingress signal.
18. The method of claim 17 wherein said ingress signal and said second ingress signal are received as part of a 1+1 protection scheme.
19. The method of claim 17 wherein said ingress signal and said second ingress signal are received as part of a 1:N protection scheme.
20. The method of claim 16 wherein said second physical identification label corresponds to a second location on said backplane where said ingress signal is found, said changing causing the transmission of a second egress signal.
21. The method of claim 20 wherein said egress signal and said second egress signal are transmitted as part of a 1:N protection scheme.
22. An apparatus, comprising:
  - a network node having a backplane and a line card, said line card having an egress channel with a backplane interface unit that selects a signal from said backplane, said backplane interface unit coupled to a

cross connect table that provides an indication where said signal may be found on said backplane, said indication correlated to a logical label, said logical label correlated to a frame location that said selected signal is transmitted within.

23. The apparatus of claim 22 wherein said egress channel further comprises a framing unit that is coupled to an output of said backplane interface, said framing unit for providing said frame location for said selected signal.

24. The apparatus of claim 23 further comprising a line interface unit having an input that is coupled to an output of said framing unit.

25. The apparatus of claim 24 wherein said line interface unit further comprises an optical transmitter.

26. The apparatus of claim 24 wherein said line interface unit has an output coupled to a networking line.

27. The apparatus of claim 23 wherein said signal is an STS-1 signal.

28. The apparatus of claim 23 wherein said signal is an STM-1 signal.

29. The apparatus of claim 23 wherein said backplane is a full mesh backplane.

30. The apparatus of claim 22 further comprising a second line card having a second egress channel with a second backplane interface unit that selects a second signal from said backplane, said second backplane interface unit coupled to a second cross connect table that provides an indication where said second signal may be found on said backplane, said indication correlated to a second logical label, said second logical label correlated to a second frame location that said selected second signal is transmitted within.

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